

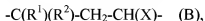
AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Canceled).
2. (Currently amended) ~~The process according to Claim 1~~ A process for preparing a vinyl polymer containing halogen atoms in an amount of 1,000 mg or less per kilogram, the process comprising (a) producing a vinyl polymer containing halogen by atom transfer radical polymerization of a vinyl monomer; and (b) dehalogenating the vinyl polymer containing halogen by heating the vinyl polymer containing the halogen at a temperature range of 140 to 250°C, wherein the dehalogenation step is performed by promoting an intramolecular cyclization reaction of the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer.
3. (Original) The process according to Claim 2, wherein the intramolecular cyclization reaction forms a lactone ring.
4. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the dehalogenation step is performed by removing an organic halide from the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer.
5. (Currently amended) ~~The process according to Claim 1~~ A process for preparing a vinyl polymer containing halogen atoms in an amount of 1,000 mg or less per kilogram, the process comprising (a) producing a vinyl polymer containing halogen by atom transfer radical polymerization of a vinyl monomer; and (b) dehalogenating the vinyl polymer containing halogen by heating the vinyl polymer containing the halogen at a temperature range of 140 to 250°C, wherein the heating is performed in the presence of an inorganic adsorbent.
6. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the heating is performed under reduced pressure.

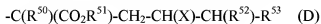
7. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the heating is performed in the presence of an oxygen radical scavenger and/or a carbon radical scavenger.

8. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer has a group expressed by general formula (B):



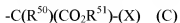
(where R^1 and R^2 each represent a group bonding to an ethylenically unsaturated group of the vinyl monomer, and X represents chlorine, bromine, or iodine).

9. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer has a group expressed by general formula (D):



(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom; R^{52} represents a hydrogen atom, a hydroxy group, or an organic group; and R^{53} represents a hydrogen atom, a hydroxy group, or an organic group).

10. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer is a mixture of a vinyl polymer having a group expressed by general formula (C) and a vinyl polymer having a group expressed by general formula (D), and the molar ratio [mole number of the group expressed by general formula (C)]/[mole number of the group expressed by general formula (D)] is in the range of 0.01 to 0.2:

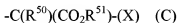


(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; and R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom):



(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom; R^{52} represents a hydrogen atom, a hydroxy group, or an organic group; and R^{53} represents a hydrogen atom, a hydroxy group, or an organic group).

11. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer is a mixture of a vinyl polymer having a group expressed by general formula (C) and a vinyl polymer having a group expressed by general formula (D), and the content of the group expressed by general formula (C) is in the range of 0.1 to 10 mmol per kilogram of the mixture:



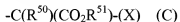
(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; and R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom):



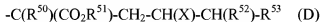
(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom; R^{52} represents a hydrogen atom, a hydroxy group, or an organic group; and R^{53} represents a hydrogen atom, a hydroxy group, or an organic group).

12. (Currently amended) The process according to ~~Claim 1~~ Claim 2, ~~wherein further comprising transforming a terminus of the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer has a terminus transformed into a γ -halocarboxylic acid structure, a γ -halocarboxylate structure, or a γ -haloester structure by a reaction of a~~ reacting the vinyl polymer containing the halogen at a terminus ~~thereof produced by atom transfer radical polymerization of a vinyl monomer with a compound having at least one ethylenically unsaturated group in the molecule thereof.~~

13. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein ~~further comprising transforming a terminus of the vinyl polymer containing the halogen produced by the atom transfer radical polymerization has a terminus transformed~~ into a group expressed by general formula (D) by ~~a reaction of a reacting the~~ reacting the vinyl polymer having a group expressed by general formula (C) at a terminus ~~thereof produced by atom transfer radical polymerization of a vinyl monomer~~ with a compound having at least one ethylenically unsaturated group in the molecule thereof:



(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; and R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom):



(where X represents chlorine, bromine, or iodine; R^{50} represents a hydrogen atom or an organic group having a carbon number in the range of 1 to 10; R^{51} represents a hydrogen atom, an organic group having a carbon number in the range of 1 to 20, or an alkali metal atom; R^{52} represents a hydrogen atom, a hydroxy group, or an organic group; and R^{53} represents a hydrogen atom, a hydroxy group, or an organic group).

14. (Previously presented) The process according to Claim 12, wherein the compound having at least one ethylenically unsaturated group in the molecule is a nonconjugated diene.

15. (Currently amended) The process according to ~~Claim 1~~ Claim 2, the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer is a (meth)acrylic polymer.

16. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer has at least one ethylenically unsaturated group or at least one hydroxy group in the molecule thereof.

17. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the vinyl polymer containing the halogen produced by the atom transfer radical polymerization of the vinyl monomer has a number average molecular weight in the range of 1,000 to 100,000.
18. (Currently amended) The process according to ~~Claim 1~~ Claim 2, wherein the molecular weight distribution (weight average molecular weight/number average molecular weight) of the vinyl polymer containing a halogen produced by atom transfer radical polymerization of a vinyl monomer is in the range of 1.05 to 1.50.
19. (Currently amended) The process according to ~~Claim 1~~ Claim 2, further comprising the step of removing insoluble contents from the vinyl polymer prepared through the dehalogenation step.
20. (Original) The process according to Claim 19, wherein the step of removing insoluble contents is performed by solid-liquid separation by means of filtration and/or sedimentation.
21. (Previously presented) The process according to Claim 19, wherein the step of removing insoluble contents is performed by solid-liquid separation by means of filtration using a filter aid.
22. (Canceled).
23. (Canceled).
24. (Canceled).
25. (Canceled).
26. (Canceled).
27. (Canceled).
28. (Canceled).

29. (Canceled).

30. (Canceled).

31. (Canceled).

32. (Canceled).

33. (Canceled).

34. (Canceled).

35. (Canceled).

36. (Canceled).

37. (New) The process according to Claim 13, wherein the compound having at least one ethylenically unsaturated group in the molecule is a nonconjugated diene.